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A Study to Assess the Effectiveness of Early Ambulation on Involution of Uterus Among Post Natal Caesarean Mothers Admitted in Government Doon Medical College& Hospital, Dehradun, Uttarakhand

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Abstract:

Introduction: Pregnancy and birthing are two supernatural processes that form the creation of life. Many pregnant women prefer caesarean section due to labour pain. To reduce the complications and enhance the early recovery of mother, early ambulation is very effective. Caesarean section mothers still lie straight in bed for minimum 24 hours. Through the research study, I would like to encourage the post-partum mothers for early ambulation and check the effects of early ambulation on involution of uterus.

Objective: To assess the involution of uterus in control and interventional group among post-natal caesarean mothers in pre-test. To evaluate the effectiveness of selected intervention in experimental group on involution of uterus after early ambulation. To find the association between pre-test intervention score with selected socio demographic variables.

Method: The study design was quasi experimental research design in which total 70 samples were selected through purposive sampling technique, 35 samples were in control group and 35 samples were in experimental group. In this study, researcher assessed fundal height just after 6 hours of caesarean section delivery and initiated early ambulation which involves Assist patient in sitting position, assist in standing position and walking, breathing exercises, kegal exercises and leg sliding exercises. fundal height is monitored in experimental group after intervention and in control group also, to measure the differences between the fundal height.

Results: The findings showed that the pretest mean score of control group was 17.23 with SD 0.899 similarily in experimental group was 17.10 with SD 0.778. The post-test mean score for control group was12.986 with SD 0.660 similarly in experimental group 10.083 with SD 1.376. P value in pretest was 0.5338 which was no significant showed that no significance difference between experimental and control group before intervention and p value of post test in control and experimental group is 0.0001 which was significant showed that there was significant difference in post test level of uterine involution among post natal caesarean mothers in control and experimental group. The mean difference between

pretest & posttest of control group was 4.249 and in experimental group means difference was 7.026 this showed that there was significant effect of early ambulation in involution of uterus among post natal caesarean mothers. There was significant mean difference between post test of control and experimental group showed significant reduction in fundal height after early ambulation in experimental group.
Conclusion: Therefore early ambulation was effective in reducing fundal height after caesarean section in post natal mothers.

Keywords: Early ambulation, involution of uterus, post natal caesarean mothers.

1. Introduction

Pregnancy and birthing are two supernatural processes that form the creation of life. They are remarkable stages in women's life, pronounced by physical and emotional modification. These processes associated with numerous stages, originate conception to delivery and childbirth is the highest point of this journey. Pregnancy and birthing represent the pliability and power of both the mother and new-born, displaying the complicated elegance of nature's design **(Manash, 2000).**The postpartum period is a time of significant changes and adaptation for new mothers. Actually, the body go through various alteration and variation as it arrives back to its pre-pregnancy shape. One of the notable changes throughout this period is the involution of uterus. After childbirth, the uterus which is increased outstandingly to accommodate the developing baby requires to contract backwards to its common size **(Harrison, 2013).**

Research had revealed that the involution of the uterus is impacted by hormonal changes, especially the reduction in estrogen and progesterone levels. These hormonal shifts provoked the release of oxytocin, a hormone accountable for stimulating uterine contractions. These contractions assist the uterus to expel the remaining placental tissue and hinder excessive bleeding **(Kota et al., 2013).**Throughout the initial stage of postpartum, the uterus is naturally located at the level of the navel and weighs approximately 1 kg. Within 24 hours following delivery, the uterus begins to contract and by the end of the first week; it contracts to almost half of its size. Throughout the series of several weeks, the uterus continues to go through involution, progressively returning to its pre-pregnancy size and position inside the pelvis **(Johns., 2016).**

In recent years, childbirth rate through caesarean section has increased worldwide. Latin America and the Caribbeanion contribute the highest (40.5%) rate of caesarean section followed by Europe at 25%,Asia at 19.2% and Africa at 7.3%(Singh et al., 2018). In Indonesia, the rate of childbirth through caesarean section is 17.6%,surpassing the limit set by the world health organization **(WHO)** of around 5-15% per 1000 births **(Viandika & Septiasari,2020).**In East Kalimantan Province,19.5% of mothers underwent caesarean sections **(Riskesdas., 2018).**

According to the latest data from 150 countries, currently, 18.6% of all births occur by CS, ranging from 6% to 27.2% in the least and most developed regions, respectively. Latin America and the Caribbean region has the highest (40.5%) Caesarean Section rates, followed by Northern America (32.3%), Oceania (31.1%), Europe (25%), Asia (19.2%) and Africa (7.3%). Based on the data from 121 countries, the trend analysis showed that between 1990 and 2014, the global average CS rate increased 12.4% (from 6.7% to 19.1%) with an average annual rate of increase of 4.4%. The largest absolute increases occurred in Latin America and the Caribbean (19.4%, from 22.8% to 42.2%), followed by Asia (15.1%, from 4.4% to 19.5%), Oceania (14.1%, from 18.5% to 32.6%), Europe (13.8%, from 11.2% to 25%),

Northern America (10%, from 22.3% to 32.3%) and Africa (4.5%, from 2.9% to 7.4%). Asia and Northern America were the regions with the highest and lowest average annual rate of increase (6.4% and 1.6%), respectively (**Betran et al. 2016).**

2. Materials and Methods

The research design acquired for this study is quasi experimental research design in which study subjects are selected through purposive sampling techniques in both experimental and control groups. In this study samples ware 70 postnatal caesarean mothers selected from GDMC hospital, in which 35 were for control group and 35 for experimental group selected on the basis on inclusion and exclusion criteria. Involution started just after delivery either normal vaginal delivery or LSCS and just removal of placenta. Main changes occur in the uterus is involution of uterus and reduction in fundal height.

Early ambulation refers the mother is encouraged the postnatal caesarean mothers to out of the bed after 6 hours of delivery. The mothers are to sit in the bed for 5 minutes and then dangle her leg one by one for few minutes. Check mother for symptoms like dizziness, headache, and nausea if not present than help the mother in stand and walk with support for 3-5 minutes a few steps. Ambulated the mother twice a day with support for 10-15 min a day. Additionally, breathing exercises, kegal exercises and leg sliding exercises to be performed to early recovery of mothers.The involution of uterus is evaluated by fundal assessment scale for 5 days from caesarean section. The time period for this study is 1 month at the month of june. The final study was conducted at Government Doon Medical College & Hospital in 70 postnatal mothers.

3. Instrument/ Tool

It consists of three sections:

Section I: Socio-Demographic profile which consists of seven items. Tool for socio demographic profile was developed on the basis of socio economic variables which include Age, marital status, Educational status, Occupation, Type of family, Area of Residence, Any past medical history

Section II: Obstetrical data which consists of seven items. Obstetrics Characteristics of the study participant's women as parity, previous delivery, Type of LSCS, Indications of LSCS, Type of anaesthesia, Antenatal registration, History of previous surgery other than LSCS.

Section III: Modified fundal assessment scale. It consists of 3 grading. Good involutions (1-12), fair involution (13-14), slow involution (15-20).

In order to measure the content validity of the tool, the tool was given 13 experts, expert was practicing in obstetrical and gynaecology and one Hindi experts and one English experts. The study was conducted on 10 samples at pandit Deen Dayal Upadhyaya (Coronation) Hospital, Dalanwala, and Dehradun from 1/05/2024 to 10/05/2024.

4. Statistical Analysis

Data analysis was based on the objectives and used descriptive and inferential statistics to analyse the data.

Descriptive Statistics

- Frequency and percentage distribution were used to analyse the demographic variables and obstetrics variables.
- Mean and standard deviation were used to describe the involution of uterus.

Inferential Statistics

- Unpaired t-test was used to compare the post-test level of uterine involution between experimental group and control group.
- Chi square test was used to find the association of post-test scores with their selected demographic variables.

5. Ethical Consideration

- Written permission was taken from principal of state college of nursing, 107, Chander nagar, Dehradun.
- Written permission was taken from ethical committee, state college of nursing, 107, Chandernagar, Dehradun.
- Written permission from the CMS Uttrakhand for pilot study in coronation Hospital.
- Written permission was taken from Mrs.Chitra Joshi, Head of Department, Obstetric and Gynecological, Govt Doon medical College Hospital, Dehradun.
- Written Consent from Nursing Matron and Ward Incharge.
- Informed written consent was taken from the participants.

6. Results

Table 1: Frequency and Percentage in assessment of pre-test and post test level of uterine involution among postnatal caesarean mothers in control and experimental group (N=70)

S. No	Group	LEVEL OF UTERINE INVOLUTION					
		GOOD	%	FAIR	%	SLOW	%
Pretest	Control Group	-	-	-	-	35	100
	Experimental Group	-	-	-	-	35	100
Post test	Control Group	-	-	3	8.57	32	91.43
	Experimental group	9	25.71	22	62.86	4	11.43

Table 1: illustrate the frequency and percentage distribution of pretest and post test level of uterine involution in postnatal caesarean mothers among control and experimental groups. It reveals that in pre-test 70 (100%) (70) Of post natal caesarean mothers had slow involution in both control and experimental groups. In post test majority 32 (91.43%) participants had slow involution and 3(8.57%) having fair involution in control group. But in experimental group post test more than half participants 22(62.86%) had fair involution, 9(25.71%) had good involution and 4 (11.43%) had slow involution. This table revealed that there was significant reduction of fundal height among post natal caesarean mothers in experimental groups-1

Table 2: COMPARISON OF MEAN LEVEL OF UTERINE INVOLUTION AMONG POSTNATAL CAESAREAN MOTHERS IN CONTROL AND EXPERIMENTAL GROUP IN PRETEST AND POSTTEST. (N=70)

Assessment	Group	Mean	SD	MD Difference	t-value	p-value
Pre-test (70)	Control (35)	17.23	0.899	0.126	0.6254	0.5338 **NS**
	Experimental (35)	17.10	0.778			
Post test (70)	Control (35)	12.986	0.660	2.903	11.257	0.0001 **S*** **
	Experimental (35)	10.083	1.376			

*****S- Significant NS- Non Significant**

Table 2 illustrate the level of uterine involution in postnatal caesarean mothers ,the pre-test mean score of control group was 17.23 with SD 0.899 similarly in experimental group was 17.10 with SD 0.778 .The post test mean score for control group was 12.986 with SD 0.660 similarly in experimental group 10.083 with SD 1.376.P value in pre-test is 0.5338 which is non-significant showed that no significance difference between experimental and control group before intervention and p value of post test in control and experimental group is .0001 which is significant showed that there was significant difference in post test level of uterine involution among post natal caesarean mothers in control and experimental group.

Table 3::Effect of early ambulation on involution of uterus in post natal caesarean mothers in post test.

Group	Mean	Standard Deviation	Mean difference	t-value	p-value
Control (35)	4.249	0.577	2.777	13.8113	<0.0001 ***** (S)**
Experimental (35)	7.026	1.040			

*****S (Significant) at p<0.001**

Table 4 illustrate the comparison of mean level in control and experimental groups in pre-test and post-test that shows that there is a significant difference between control and experimental group in pre-test and post test.

7. Discussion

The first objective of the study was to assess the involution of uterus in both control and experimental group among post natal caesarean mothers in pre-test.

The analysis of pre experimental level of uterine involution among post natal caesarean mothers in pre-test revealed that none of them had good uterine involution in both control and experimental group. In post test of control group only 3(8.57%) had fair involution and 32(91.43%) had slow involution. In

experimental group post-test 9(25.71%) had good involution, 22 (62.86%) had moderate involution and 4 (11.43%) had slow involution.

The findings supported by this study

Shyla (2012) revealed that the level of uterine involution in control group, out of 30 postnatal mothers 10(33.33%) of the mothers had good involution, 18(60%) of the mothers had average involution and remaining 2(6.66%) of the mothers had poor involution. With regards to the level of uterine involution 26 (86.66%) of the mothers had good involution,4(13.33%) of the mothers had average and none of the mothers had poor uterine involution in the experimental group.

Second objectives were to evaluate the effectiveness of selected intervention in experimental group on involution of uterus after early ambulation.

The findings of the study showed that the level of uterine involution in postnatal caesarean mothers, the pre-test mean score of control group was 17.23 with SD 0.899 similarly in experimental group was 17.10 with SD 0.778 .The post-test mean score for control group was 12.986 with SD 0.660 similarly in experimental group 10.083 with SD 1.376.P value in pre-test is 0.5338 which is non-significant showed that no significance difference between experimental and control group before intervention and p value of post test in control and experimental group is 0.0001 which is significant showed that there was significant difference in post test level of uterine involution among post natal caesarean mothers in control and experimental group. The comparison of mean level in control and experimental group in pre-test and post test, this shows that there is significant difference between control and experimental group pre-test and post test. The mean difference pre-test post test of control group is 4.249 and in experimental group mean difference is 7.026; this showed that there is significant effect of early ambulation in involution of uterus among post natal caesarean mothers. There was significant mean difference between post test of control and experimental group showed significant reduction in fundal height after early ambulation in experimental group. **Hence the hypothesis H1 is accepted. It refers there is a significant mean difference between the mean post-test of control and experimental group of involution of uterus among post natal caesarean mothers**

Third objectives were to find the association between pre test intervention score with selected socio demographic variables.

Association of pre-test assessment level of uterine involution with their selected demographic variables was performed by chi-square test. The study reveals that there was no statistically significance association of pre-test assessment of level of uterine involution among control group and experimental group with their selected demographic variables at $p < 0.05$ level of significance. From the analysis there was no association between pre-test level of uterine involution among post natal caesarean mothers in both control and experimental group. **The study hypothesis was there is a significant association between early ambulation on involution of uterus with selected demographic variables. Hence hypothesis H2 was rejected in both control and experimental group**